

REMARKS

In an Office Action mailed on November 7, 2002, claims 6, 7, 9-12 and 14 were rejected under 35 U.S.C. § 102(b) as being anticipated by Harwer; claims 1-3 and 5 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Harwer in view of Woychik; claim 4 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Harwer; claims 15, 16, 18, 19 and 25-30 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Dell in view of Pope; claim 17 and 20-24 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Dell in view of Volz; and claims 8 and 13 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Harwer in view of Dell. These rejections are addressed in the corresponding sections below.

A marked-up version of the amended claims is submitted as a separate document. The undersigned has endeavored to ensure that the clean and marked-up versions of the amended claims correspond. However, the Examiner is specifically requested to verify that these two versions of the claims are consistent.

Rejections of Claims 6-10:

As amended, the circuit board of claim 6 includes circuitry and a substrate that supports the circuitry and has a contact edge to be inserted into a slot connector housing assembly. The substrate has an edge profile that is engaged by the connector housing assembly to resist removal of the circuit board from the connector housing assembly.

In contrast to the limitations of amended claim 6, Harwer neither teaches nor suggests a substrate that has an edge profile that is engaged by a connector housing assembly to resist removal of the circuit board from the connector housing assembly. The Examiner states that the substrate 40 inherently has an edge profile that is engaged by a mechanism located inside the slot connector housing assembly 28 or 30. Office Action, 2. However, for a limitation to be inherent in the reference, the limitation must *necessarily flow* from the reference. *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990).

It is noted that Harwer neither teaches nor suggests a substrate has an edge profile that is engaged by the connector housing assembly to resist removal of the circuit board from the connector housing assembly. In this manner, the edge profiles shown in Figs. 2a, 2b and 2c do not resist removal of the card 40 from the connectors 28 and 30. Furthermore, the missing claims limitations do not necessarily flow from Harwer, and thus, cannot be considered inherent.

For at least the reason that Harwer fails to expressly, implicitly or inherently teach all of the limitations of amended claim 6, withdrawal of the § 102 rejection of claim 6 is requested. Claims 7-10 are patentable for at least the reason that these claims depend from an allowable claim.

Rejections of Claims 1-5:

The Examiner fails to establish a *prima facie* case of obviousness for claim 1. In this manner, claim 1 recites that the contacts that mate with a slot connector include a first set of at least three uniformly spaced contacts to communicate power and a second set of at least three uniformly spaced contacts to communicate signals and not to communicate power.

At a minimum, Harwer fails to teach the first set of at least three uniformly spaced contacts to communicate power and thus, fails to teach the relative distances between contacts of the first and second sets of contacts. To derive the missing claim limitations, the Examiner combines Harwer with Woychik. However, the Examiner fails to establish a *prima facie* case of obviousness, as a *prima facie* case of obviousness requires that there must be some suggestion or motivation to modify a reference or combine a reference with another reference. M.P.E.P. § 2143. The Examiner fails to meet this requirement, as the Examiner does not cite to any language (in any prior art reference) that supports the alleged suggestion or motivation to modify Harwer as set forth by the Examiner. *See, for example, Ex parte Gambogi*, 62 USPQ2d 1209, 1212 (Bd. Pat. App. & Int. 2001); *In re Rijckaert*, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993); M.P.E.P. § 2143. In short, the Examiner has not shown any language that supports the proposition that one skilled in the art would have been motivated to modify the card of Harwer so that Harwer's card contains at least three uniformly spaced power contacts and Harwer's card

has different distances between adjacent power and signal contacts. Thus, a *prima facie* case of obviousness has not been established for claim 1.

Thus, for at least this reason, withdrawal of the § 103(a) rejection of claim 1 is requested. Claims 2-5 are patentable for at least the reason that these claims depend from an allowable claim.

Rejections of Claims 11-14:

As amended, claim 11 recites forming an edge profile in the substrate to engage a slot connector housing assembly to resist removal of the circuit board from the slot connector housing assembly.

As discussed above in connection with the § 102 rejection of claim 6, Harwer neither teaches nor suggests (explicitly, implicitly or inherently) forming an edge profile that is engaged by a connector housing assembly to resist removal of the circuit board from the slot connector housing assembly. Therefore, for at least this reason, Harwer fails to teach all the limitations of amended claim 11. Therefore, withdrawal of the rejections of claims 11-14 is requested.

Rejections of Claims 15-20:

The Examiner rejects claims 15 and 18 under 35 U.S.C. § 103(a) as being unpatentable over Dell in view of Pope. However, the Examiner fails to establish a *prima facie* case of obviousness for claims 15 and 18 for at least two reasons. First, the Examiner fails to provide any support for the alleged suggestion or motivation to combine Dell and Pope. *Ex parte Gambogi*, 62 USPQ2d 1209, 1212 (Bd. Pat. App. & Int. 2001); *In re Rijckaert*, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993); M.P.E.P. § 2143.

Furthermore, the Examiner fails to establish a *prima facie* case of obviousness for claims 15 and 18 for at least the reason that the Examiner does not cite a reference that teaches a material having a thermal conductivity of at least approximately 0.27 W/m·K. In this manner, although the Examiner contends that the DuPont material called Zenite teaches such a thermal conductivity, Applicant can find no teaching in Pope or otherwise that sets forth that Zenite has the claimed minimal thermal conductivity. If the Examiner is aware of such a reference, then

Applicant requests the Examiner to provide this reference. Otherwise, withdrawal of the rejections of independent claims 15 and 18 is requested. Claims 16, 17, 19 and 20 are patentable for at least the reason that these claims depend from allowable claims.

Rejections of Claims 21-24:

The Examiner rejects claim 21 under 35 U.S.C. § 103(a) as being unpatentable over Dell in view of Volz. However, the Examiner fails to establish a *prima facie* case of obviousness for independent claim 21. In this manner, there must be support for the alleged suggestion or motivation to modify Dell so that the connector housing of Dell has fins. Without such a suggestion or motivation, a *prima facie* case of obviousness cannot be established. See, *for example, Ex parte Gambogi*, 62 USPQ2d 1209, 1212 (Bd. Pat. App. & Int. 2001); *In re Rijckaert*, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993); M.P.E.P. § 2143.

Thus, for at least this reason, withdrawal of the rejections of claims 21-24 is requested.

Rejections of Claims 25-27:

The slot connector of claim 25 includes a retention mechanism to engage a profile of the circuit board to secure the circuit board to the slot connector. In the § 103(a) rejection of claim 25, the Examiner refers to the spring 58 of Dell. However, the spring 58 does not engage an edge profile of a circuit card. Therefore, Dell fails to teach this claim limitation, and the Examiner fails to show support for a suggestion or motivation to modify Dell to derive the missing claim limitation. Therefore, for at least these reasons, the Examiner fails to establish a *prima facie* case of obviousness for independent claim 25. Claims 26 and 27 are patentable for at least the reason that these claims depend from an allowable claim.

Rejections of Claims 28-30:

The method of claim 28 includes attaching a retention mechanism to a housing to engage an edge profile of a circuit board to secure the circuit board to the housing.

The Examiner rejects independent claim 28 under 35 U.S.C. § 103(a) as being unpatentable over Dell in view of Pope. The Examiner states that, "claims 28-30 recite method

steps are inherently performed during the making of product claims 25-27." Office Action, p. 6. However, for a limitation to be inherent in a reference, the missing claim limitation must necessarily flow from the reference. The Examiner points to no language of Dell or Pope that teaches attaching a retention mechanism to a housing to engage an edge profile of a circuit board; and the Examiner points to no language from which the missing claim limitations would necessarily flow. Furthermore, the Examiner fails to provide support for the alleged suggestion or motivation to combine Dell and Pope and fails to provide support for a suggestion or motivation to modify either of these references to derive the missing claim limitations. In short, the Examiner fails to establish a *prima facie* case of obviousness for claim 28.

Claims 29 and 30 are patentable for at least the reason that these claims depend from an allowable claim. Therefore, withdrawal of the § 103(a) rejections of claims 28-30 is requested.

CONCLUSION

In view of the foregoing, withdrawal of the §§ 102 and 103 rejections and a favorable action in the form a Notice of Allowance are requested. The Commissioner is authorized to charge any additional fees, or credit any overpayment to Deposit Account No. 20-1504 (ITL.0519US).

Respectfully submitted,

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CLAIM AMENDMENTS

The claims have been rewritten as follows:

6. (Twice Amended) A circuit board comprising:
circuitry; and
a substrate supporting the circuitry and having a contact edge to be inserted into a slot connector housing assembly, the substrate having an edge profile engaged by the connector housing assembly to resist removal of [hold] the circuit board [in] from the connector housing assembly.
9. (Twice Amended) The circuit board of claim 6, wherein the profile comprises a notch formed in [an] a straight edge of the substrate, the straight edge being different from the contact edge and being inserted into the slot connector housing to position the edge profile to engage the connector housing assembly.
10. (Twice Amended) The circuit board of claim 9, wherein the straight edge [different from the contact edge] extends in an orthogonal direction to the contact.
11. (Twice Amended) A method comprising:
supporting circuitry on a substrate to form a circuit board; and
forming an edge profile in the substrate to engage a slot connector housing assembly to resist removal of the circuit board from the slot connector housing assembly [hold the circuit board in the slot connector housing assembly].